

Statistics of Hawaii Agriculture 1999

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HAWAII AGRICULTURE 1999

Farm Revenue From Diversified Agriculture Continues At Record Pace

Total farm level revenue rose 3 percent in 1999 to an eight-year high \$528 million, on the strength of pineapple and diversified agriculture. Typically there were both gains and declines among the growing number of diversified crops. Although dry weather and world related price fluctuations resulted in declines for some commodities, there were several bright spots as the diversified sector continued to expand, also rising 3 percent from 1998 to a record \$339 million.

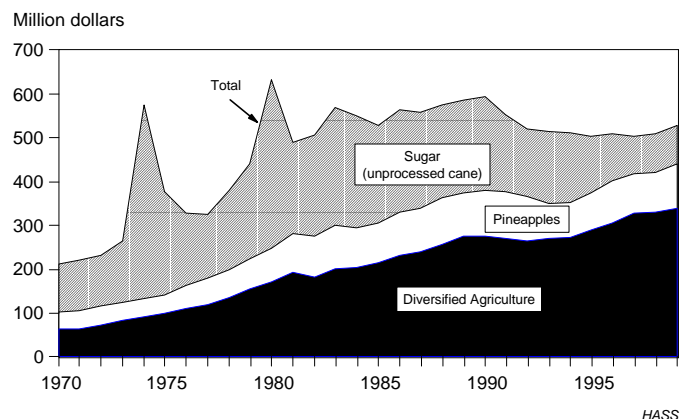
The equivalent farm value of pineapple, the State's leading commodity, rose 9 percent from the previous year, surpassing \$100 million for the first time since 1992, and the fifth highest on record. A boost in production was responsible for the increase, as lower prices tempered the gains.

Although the equivalent farm value of sugarcane declined 1 percent to \$86.8 million, it remained the second leading earner among all agricultural commodities.

Leading the way among diversified commodities were record high gross returns for vegetables and melons, herbs, bananas, flowers and nursery products, seed crop research, aquaculture, and taro. Receipts for fruit crops other than pineapple also rose from the previous year, as papaya production began its recovery from the devastating effects of the papaya ringspot virus experienced during the nineties. Ginger root growers had their second best year ever. Prolonged dry weather adversely impacted, to varying degrees, macadamia nut and coffee production, and the beef cattle industry. World market related price declines were the principal contributor to lower coffee receipts.

Farm level values are an important measure of production agriculture, but they don't truly reflect the total contribution of agriculture to the State and individual county economies. Adding the values of sugar and pineapple processing raises the total to \$617 million for 1999, however, even that is incomplete. Unknown are the value added figures for macadamia nut, coffee, fruit, vegetable, and taro processing, as well as all of the direct and indirect business activity resulting from agriculture. For a more complete picture of agriculture's contribution, refer to "Accounting for the linkages of Agriculture in Hawaii's Business Economy with an input-output Model: A Final Demand-Based Approach" by University of Hawaii Agricultural Economists Khem R. Sharma, PingSun Leung, and Stuart Nakamoto, which was done for 1992.

Cash Receipts of Agricultural Commodities, State of Hawaii, 1970-99



Curious Absence of Rain Hampers Farming

Overall weather conditions improved from the previous year, but remained less than favorable in many agricultural areas. While the beginning and ending of the year were marked with unstable weather, most of 1999 was distinguished by the consistent presence of trade winds that produced generally sunny skies and moderate temperatures; conditions that aided the growth of many crops. However, 1999 was also marked by the curious absence of rain showers that are typically associated with the trade winds. As a result, crops that largely depend on natural rainfall did not perform well. This group included orchard crops such as coffee, macadamia nuts, avocados, guavas, and other fruit trees. Pastures were among the most severely affected by the dry weather as they depend on natural rainfall for grass growth and rejuvenation. Deteriorated pastures were a major reason why many cattle ranchers were forced to reduce their herd size. Crops receiving irrigation, on the other hand, were able to take near full advantage of 1999's stable weather conditions. With approximately 90 percent of its acreage subject to irrigation, vegetable farmers fared particularly well. Still, some irrigated farms were adversely affected by the overall dryness as both voluntary and mandatory water conservation measures were implemented during the year. Geographically, the northern islands fared better in 1999 as passing cold fronts provided most areas with adequate precipitation. Southern islands, however, were relatively dry with leeward sections being particularly parched.

January - April

A shear line passed across the State on New Year's Day generating moderate to heavy showers on Kauai and Oahu. A cold front then dumped some heavy showers on Maui County and portions of Hawaii island on January 8 and 9. While crop progress and fieldwork were hampered by these sometimes heavy showers, losses were relatively light and farmers welcomed the showers after enduring one of the most intense El Niño episodes the previous year. The promise of a wet year, however, quickly faded in February as most rainfall stations reported receiving less than 50 percent of their normal monthly total. Unseasonably strong trade winds in early February also hampered farming activities and crop progress. Trade winds continued to blow throughout March and April. These trades generated occasional showers, heavy at times, in windward areas. Among the wettest spots was the windward side of the Big Island where total rainfall was 36 percent above the mean during the first four months of 1999.

May - September

Trade winds were light and rainfall was scant as the Hawaiian islands entered its dry period. A Kona storm west of Kauai spawned some heavy shower activity over that island at mid-May. The other islands, however, failed to benefit from the Kona storm and generally remained dry. The windward side of Hawaii island also began to see a reversal of rainfall with Hilo airport reporting only 2.84 inches of rain in May, down 30 percent from the normal amount. This drying out of the normally wet windward side of the

Big Island would continue for the remainder of 1999. As the *Ka'u* or drier season continued into June and July, dry conditions became the norm. There were occasional showers, but in general, conditions remained relatively dry. Voluntary water conservation measures began to pop-up on Maui in late May and on Molokai in June. The Big Island instituted its own water conservation measures in late June. As summer deepened with no significant amount of rain, the water restrictions began to tighten. Maui moved to mandatory restrictions in July and a drought emergency was declared for parts of the Big Island in August.

October - December

The start of the wet or *Ho'oilo* season was appropriately named as a large Kona storm northwest of the State generated some intense showers for many parts of the State. Rainfall was heaviest on Kauai with four-day totals in the three to seven inch range. The Kona storm hampered crop progress and short-lived flooding was reported, but the storm also provided some much needed rain to previously parched areas. Kauai was subjected to another round of heavy showers in early November when another Kona storm developed close to the island. A relatively dry 1999 ended in December with a variety of unstable weather conditions generating frequent showers. Many stations across the State recorded normal or above normal rainfall during December.

WEATHER: Precipitation, selected stations, State of Hawaii, 1999

STATIONS	Year & normal	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Annual	% Annual normal
ISLAND OF HAWAII															
Hilo International Airport	Normal	9.07	12.90	13.69	12.88	10.07	6.61	9.54	10.88	7.44	10.96	13.77	15.76	133.57	
	1999	16.68	19.34	12.13	16.04	2.84	4.66	3.54	10.14	5.65	3.61	7.74	14.41	116.78	87.4
Kamuela (HI86)	Normal	6.60	6.00	7.90	6.90	4.00	2.20	3.70	4.10	2.20	3.30	5.80	7.30	60.00	
	1999	3.50	4.40	10.30	2.20	.50	1.10	2.50	3.00	2.20	2.60	5.50	5.40	43.20	72.0
Kealahou (HI84)	Normal	4.70	3.40	5.60	6.20	7.70	8.20	8.70	8.30	8.20	6.20	4.40	3.40	75.00	
	1999	3.00	.50	2.00	2.80	2.20	4.80	3.70	3.70	4.60	4.20	2.00	1.40	34.90	46.5
Laupahoehoe (HI80)	Normal	13.50	13.20	19.50	18.90	11.70	6.20	10.00	12.40	6.90	9.30	13.60	14.80	150.00	
	1999	16.65	16.36	14.00	--	1.13	3.30	2.52	7.34	4.36	3.04	12.17	16.16	97.03	64.7
Pahala (HI85)	Normal	7.70	6.10	6.30	5.00	3.80	2.20	2.10	3.30	3.40	4.20	5.50	5.40	55.00	
	1999	4.58	5.17	.39	1.39	.61	.20	.04	.06	1.14	3.88	.72	10.21	28.39	51.6
Pahoa (HI83)	Normal	13.90	10.90	14.70	13.90	10.50	7.10	9.80	10.60	9.20	11.50	13.30	14.60	140.00	
	1999	15.70	23.20	13.40	12.60	3.20	3.50	5.00	10.10	9.40	5.20	8.10	16.70	126.10	90.1
ISLAND OF KAUAI															
Anahola (HI48)	Normal	6.80	4.40	6.00	4.60	3.20	1.60	2.50	2.50	2.00	5.10	5.40	5.90	50.00	
	1999	--	1.22	1.11	1.61	5.13	1.41	2.81	--	.90	6.89	1.79	4.03	26.90	53.8
Hanalei (HI45)	Normal	11.30	10.10	14.00	12.70	8.10	5.30	8.60	6.30	4.70	7.00	12.20	9.70	110.00	
	1999	8.92	6.91	6.58	6.56	3.48	4.97	7.99	7.40	3.16	7.09	9.95	11.54	84.55	76.9
Omao (HI51)	Normal	6.90	4.50	5.50	5.20	4.20	3.40	4.70	4.60	3.70	4.70	5.90	6.70	60.00	
	1999	6.00	2.00	3.10	3.80	4.00	3.10	4.10	2.90	2.80	6.30	3.40	6.00	47.50	79.2
ISLAND OF MAUI															
Hana (HI61)	Normal	9.50	6.80	9.50	9.00	6.20	3.80	5.60	5.60	5.40	7.00	8.70	6.10	83.20	
	1999	16.20	10.40	4.20	4.10	1.00	2.60	3.60	2.90	3.00	1.90	1.60	3.50	55.00	66.1
Kula (HI65)	Normal	4.90	3.70	2.80	2.80	2.10	1.10	1.40	1.90	2.00	1.40	2.50	3.40	30.00	
	1999	2.10	1.50	.50	1.90	.90	0	.20	.40	.20	1.30	.10	2.80	11.90	39.7
Wailuku (HI66)	Normal	5.20	3.80	3.60	3.00	1.20	.40	.60	.70	.60	1.70	2.90	4.30	28.00	
	1999	2.57	2.32	1.34	.32	.33	.25	.26	.43	.10	--	--	--	7.92	28.3
ISLAND OF OAHU															
Kahuku (HI09)	Normal	6.30	4.20	5.30	4.00	2.50	1.80	2.20	2.60	2.20	4.00	4.60	5.30	45.00	
	1999	3.10	1.10	2.00	4.60	3.30	1.40	2.70	.90	.50	3.80	1.80	3.60	28.80	64.0
Waialua (HI04)	Normal	5.60	3.90	3.80	2.80	1.70	.90	1.30	.80	1.10	2.70	4.20	5.00	33.80	
	1999	1.77	.74	.96	1.70	3.69	.35	1.33	.56	.40	5.59	1.17	6.78	25.04	74.1
Waianae (HI17)	Normal	3.80	2.30	2.50	1.60	.70	.30	.30	.70	.70	1.80	2.00	3.30	20.00	
	1999	1.90	.30	.20	.10	2.90	.10	0	.20	0	4.10	.10	3.90	13.80	69.0
Waimanalo (HI13)	Normal	8.10	4.90	5.60	4.90	3.10	1.50	1.70	2.00	1.80	4.30	4.90	7.20	50.00	
	1999	4.79	.45	1.53	.54	3.43	.94	1.70	1.16	.70	1.65	.86	7.37	25.12	50.2

-- = Missing data; incomplete.

Source: U. S. Department of Commerce, National Oceanic and Atmospheric Administration. Most rainfall stations were selected from the National Weather Service's hydronet system of automated gages, and those data have not been quality controlled to date, and therefore is not certified by the National Weather Service.

Pages 5 & 6 not included at this time.

SUMMARIES

Top 20 commodities, State of Hawaii, 1998-99

Commodity ¹	Rank		Value of production	
	1998	1999	1998	1999
	--- Number ---		--- 1,000 dollars ---	
Pineapples (fresh equivalent)	1	1	92,776	101,448
Sugar (unprocessed cane)	2	2	87,400	86,800
Macadamia nuts	3	3	37,375	37,855
Milk	4	4	33,293	31,223
Seed crops	5	5	25,300	28,000
Coffee	6	6	24,700	21,000
Cattle	7	7	16,861	16,607
Papayas	8	8	12,589	15,929
Eggs	9	9	11,220	10,803
Bananas	11	10	7,350	8,575
Ginger root	12	11	7,200	8,050
Tomatoes	15	12	5,610	7,896
Algae	10	13	8,295	7,883
Anthuriums	13	14	6,301	6,496
Dendrobiums, potted	14	15	6,069	6,194
Hogs	16	16	5,235	5,072
Taro	17	17	3,180	3,604
Dendrobiums, sprays	18	18	2,864	2,676
Cabbage, head	19	19	2,754	2,574
Cucumbers	20	20	2,520	2,494

NA = Not available.

¹ Floriculture categories include only growers with total sales of \$10,000 or more.

Farm values, State of Hawaii, 1980-99

Year	Sugar (unprocessed cane)	Pineapples (fresh equivalent)	Diversified agriculture ¹
	1,000 dollars		
1980	385,100	76,596	172,405
1981	207,500	89,745	192,257
1982	230,800	94,364	182,104
1983	266,900	100,376	201,138
1984	256,200	89,928	204,389
1985	222,400	90,530	215,719
1986	233,800	99,720	231,197
1987	218,000	99,286	240,012
1988	209,900	107,402	256,660
1989	210,300	98,310	276,438
1990	213,800	106,365	275,789
1991	174,900	107,775	268,707
1992	153,700	102,100	264,427
1993	163,000	79,850	271,094
1994	160,100	78,890	273,826
1995	127,700	87,360	288,530
1996	108,100	95,914	306,207
1997	85,500	91,721	327,456
1998	87,400	92,776	329,886
1999	86,800	101,448	339,416

¹ Aquaculture included beginning 1993.

Diversified agriculture ranked by value, State of Hawaii, 1998-99

Commodity	Rank		Value of production			Percent of diversified agriculture	
	1998	1999	1998	1999	Year-to-year percent change	1998	1999
	--- Number ---		----- 1,000 dollars -----		----- Percent -----		
Flowers and nursery products	1	1	73,207	75,363	+3	22.2	22.2
Vegetables and melons ¹	2	2	51,149	56,438	+10	15.5	16.6
Macadamia nuts	3	3	37,375	37,855	+1	11.3	11.2
Milk	4	4	33,293	31,223	-6	10.1	9.2
Fruits (excluding pineapples)	7	5	24,530	28,216	+15	7.4	8.3
Seed crops	5	6	25,300	28,000	+11	7.7	8.2
Coffee	6	7	24,700	21,000	-15	7.5	6.2
Aquaculture	9	8	16,620	18,102	+9	5.0	5.3
Cattle	8	9	16,861	16,607	-2	5.1	4.9
Eggs	10	10	11,220	10,803	-4	3.4	3.2
Hogs	11	11	5,235	5,072	-3	1.6	1.5
Other livestock and crops			10,396	10,737	+3	3.2	3.2
Total			329,886	339,416	+3	100.0	100.0

¹ Includes ginger root and herbs.

SUMMARY: Acreage in crop and total farm acreage, by counties, 1995-99

Year	Sugarcane	Pineapples ¹	Vegetables and melons ^{2 3}	Fruits (excluding pineapples)	Coffee	Macadamia nuts	All other crops ⁴	Total farm acreage ⁵
1,000 acres								
State⁶								
1995	83.8	19.9	6.0	7.0	6.8	20.3	6.5	1,470
1996	68.8	20.0	6.2	7.1	6.6	20.2	8.4	1,440
1997	68.7	19.9	6.5	8.0	7.0	20.2	13.3	1,440
1998	67.6	21.0	6.6	7.6	7.4	20.2	15.9	1,440
1999	67.0	21.0	8.2	8.1	7.7	19.9	16.2	1,440
Counties:								
Hawaii								
1995	2.4	*	2.0	5.5	1.9	⁷	2.1	890
1996	0	*	2.1	5.3	2.2	⁷	1.7	870
1997	0	*	2.1	5.6	2.5	⁷	1.7	870
1998	0	*	2.1	4.8	2.8	⁷	2.0	870
1999	0	*	2.3	4.9	3.2	⁷	2.3	870
Honolulu								
1995	8.0	10.4	1.9	.5		⁷	.8	85
1996	0	10.7	2.5	.8	⁷	⁷	4.0	80
1997	0	10.8	2.9	1.3	⁷	⁷	8.3	80
1998	0	11.4	2.8	1.6	⁷	⁷	11.0	80
1999	0	11.9	4.3	1.9	⁷	⁷	10.9	80
Kauai								
1995	30.8	*	.1	.8	⁷	⁷	1.4	200
1996	26.5	*	.1	.8	⁷	⁷	1.3	200
1997	25.6	*	.1	.8	⁷	⁷	1.6	200
1998	24.7	*	.1	.9	⁷	⁷	1.0	200
1999	23.7	*	.2	1.0	⁷	⁷	1.1	200
Maui								
1995	42.6	9.5	2.0	.2	⁷	⁷	2.2	295
1996	42.3	9.3	1.5	.2	⁷	⁷	1.4	290
1997	43.1	9.1	1.4	.3	⁷	⁷	1.7	290
1998	42.9	9.6	1.6	.3	⁷	⁷	1.9	290
1999	43.3	9.1	1.4	.3	⁷	⁷	1.9	290

* = Less than 50 acres.

¹ Land used for pineapple.

² Harvested acreage.

³ Includes ginger root.

⁴ Includes taro, seed corn, feed and forage crops (excluding pineapple feed products), flowers, foliage and nursery products.

⁵ Includes land not in crop and pasture such as farm house lots, roads, woodlots, etc.

⁶ Sum of county estimates may not add to State total due to rounding.

⁷ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

SUMMARIES

SUMMARY: Number of crop farms, by counties, 1995-99

Year	Sugarcane	Pineapples ¹	Vegetables and melons	Fruits (excluding pineapples)	Coffee	Macadamia nuts	Taro	Flowers and nursery products
State								
1995	9	15	690	924	580	700	190	705
1996	7	20	950	1,040	560	750	180	690
1997	4	15	1,000	1,043	585	800	160	670
1998	4	15	880	1,515	610	800	180	745
1999	4	15	1,020	1,373	650	800	190	855
Counties:								
Hawaii								
1995	1	7	335	652	570	²	109	333
1996	1	8	400	720	550	²	100	316
1997	0	6	440	704	575	²	85	312
1998	0	5	432	912	600	²	100	355
1999	0	5	600	805	635	²	100	376
Honolulu								
1995	2	2	235	128		²	9	220
1996	1	2	395	135	²	²	4	211
1997	0	2	400	129	²	²	10	202
1998	0	2	280	186	²	²	11	205
1999	0	2	230	174	²	²	12	245
Kauai								
1995	4	3	25	70	²	²	52	46
1996	3	4	50	100	²	²	54	52
1997	2	3	55	124	²	²	50	50
1998	2	3	54	155	²	²	55	40
1999	2	3	45	143	²	²	65	80
Maui								
1995	2	3	95	74	²	²	20	106
1996	2	6	105	85	²	²	22	111
1997	2	4	105	86	²	²	15	106
1998	2	5	114	262	²	²	14	145
1999	2	5	145	251	²	²	13	154

¹ Includes specialty pineapple.

² Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

SUMMARIES

SUMMARY: Number of livestock operations and total number of farms, by counties, 1995-99

Year	Cattle ¹	Hogs	Milk	Eggs	Honey	Total (non-duplicated) ²
State						
1995	850	300	60	55	20	5,300
1996	850	250	60	55	25	5,400
1997	830	250	50	55	23	5,500
1998	830	250	50	55	29	5,500
1999	800	230	50	55	28	5,500
Counties:						
Hawaii						
1995	460	70	30	25	14	3,150
1996	470	80	30	25	16	3,250
1997	480	90	27	25	14	3,300
1998	480	80	27	26	18	3,300
1999	470	70	28	28	14	3,300
Honolulu						
1995	60	120	15	19	³ 6	900
1996	60	70	15	19	³ 9	900
1997	50	70	10	19	³ 9	900
1998	50	80	10	17	³ 11	900
1999	60	70	10	15	³ 14	900
Kauai						
1995	140	50	10	4	³ 6	450
1996	130	40	10	4	³ 9	450
1997	120	30	8	4	³ 9	500
1998	120	40	8	4	³ 11	500
1999	100	30	8	4	³ 14	500
Maui						
1995	190	60	5	7	³ 3	800
1996	190	60	5	7	³ 3	800
1997	180	60	5	7	³ 3	800
1998	180	50	5	8	³ 3	800
1999	170	60	4	8	³ 3	800

¹ Includes beef, dairy, and dairy replacement operations.

² Based on farm definition of \$1,000 or more of agricultural sales.

³ Honolulu and Maui combined with Kauai to avoid disclosure of individual operations.

SUMMARIES

SUMMARY: Value of crop sales, by counties, 1995-99

Year	Sugar (unprocessed cane)	Pineapples (fresh equivalent)	Vegetables, ginger root, herbs, and melons	Fruits (excluding pineapples)	Coffee (parchment)
<i>1,000 dollars</i>					
State					
1995	127,700	87,360	38,604	28,218	16,200
1996	108,100	95,914	40,672	26,521	20,800
1997	85,500	91,721	44,626	29,564	28,200
1998	87,400	92,776	51,149	24,530	24,700
1999	86,800	101,448	56,438	28,216	21,000
Counties:					
Hawaii					
1995	12,200	*	14,267	22,255	11,500
1996	1,700	*	16,140	20,646	10,810
1997	0	*	17,585	21,018	16,245
1998	0	*	16,249	14,672	16,100
1999	0	*	18,569	15,547	9,300
Honolulu					
1995	21,000	62,585	10,283	2,353	3
1996	10,400	68,770	12,554	2,640	3
1997	0	63,426	14,499	4,814	3
1998	0	64,363	22,098	6,487	3
1999	0	73,123	27,419	8,535	3
Kauai					
1995	35,100	*	294	2,579	3
1996	38,800	*	326	2,377	3
1997	31,600	*	850	2,596	3
1998	28,700	*	1,047	2,320	3
1999	26,600	*	931	3,078	3
Maui					
1995	59,400	24,775	13,760	1,031	3
1996	57,200	27,144	11,652	858	3
1997	53,900	28,295	11,692	1,136	3
1998	58,700	28,413	11,755	1,051	3
1999	60,200	28,325	9,519	1,056	3

See footnotes at end of table.

Continued

SUMMARY: Value of crop sales, by counties, 1995-99 -- Continued

Year	Macadamia nuts (in-shell)	Taro	Seed crops	Flowers and nursery products ¹	Total crops ²
<i>1,000 dollars</i>					
State					
1995	37,740	3,264	13,000	68,175	421,089
1996	44,070	2,793	20,250	68,870	428,671
1997	43,500	2,805	25,150	66,655	418,661
1998	37,375	3,180	25,300	73,207	420,734
1999	37,855	3,604	28,000	75,363	439,940
Counties:					
Hawaii					
1995	3	657	3	32,608	128,564
1996	3	689	3	34,275	125,428
1997	3	698	3	34,501	130,887
1998	3	627	3	39,153	121,676
1999	3	632	3	41,578	121,056
Honolulu					
1995	3	3	3	25,970	123,074
1996	3	3	3	25,115	121,045
1997	3	3	3	22,131	107,347
1998	3	3	3	23,743	124,630
1999	3	3	3	22,654	141,892
Kauai					
1995	3	1,997	3	1,801	55,387
1996	3	1,536	3	1,965	65,754
1997	3	1,657	3	1,804	59,425
1998	3	1,976	3	1,360	49,612
1999	3	2,236	3	1,514	52,466
Maui					
1995	3	3	3	7,796	114,064
1996	3	3	3	7,515	116,444
1997	3	3	3	8,219	121,002
1998	3	3	3	8,951	124,816
1999	3	3	3	9,617	124,526

* = Less than \$50,000.

¹ Flowers, foliage, and nursery products.

² Total crop values shown for individual counties are actual. Sum of individual commodities may not add to total. Forage crops' and Forest product's value combined and included in total crop value.

³ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

SUMMARIES

SUMMARY: Value of livestock sales, total value of crop, livestock sales, aquaculture, and government payments, by counties, 1995-99¹

Year	Cattle ²	Hogs ²	Milk	Eggs	Total livestock ³	Aquaculture	Total crops, livestock and aquaculture ⁴	Government payments ⁵
1,000 dollars								
State								
1995	15,417	6,596	32,146	13,516	72,296	13,307	506,692	566
1996	13,175	6,585	29,234	12,963	67,017	15,655	511,343	NA
1997	14,323	4,902	29,479	12,986	67,799	16,600	503,060	NA
1998	16,861	5,235	33,293	11,220	72,708	16,620	510,062	NA
1999	16,607	5,072	31,223	10,803	69,622	18,102	527,664	NA
Counties:								
Hawaii								
1995	9,976	460	6	6	17,863	11,403	157,830	414
1996	8,168	455	6	6	16,732	13,197	155,357	NA
1997	9,658	404	6	6	19,078	13,380	163,345	NA
1998	11,312	420	6	6	20,846	13,383	155,905	NA
1999	12,164	569	6	6	22,304	13,377	156,737	NA
Honolulu								
1995	944	3,524	22,672	10,507	39,504	1,625	164,203	7
1996	713	3,754	19,130	9,905	35,435	2,055	158,535	NA
1997	581	3,036	19,204	10,002	34,909	2,120	144,376	NA
1998	514	3,451	21,838	8,193	36,189	2,100	162,919	NA
1999	551	3,143	23,276	7,821	36,892	2,333	181,117	NA
Kauai								
1995	875	963	6	6	4,244	NA	59,631	9
1996	869	879	6	6	4,170	NA	69,924	NA
1997	1,082	454	6	6	4,000	6	63,645	NA
1998	1,394	539	6	6	5,116	6	54,979	NA
1999	1,027	466	6	6	4,536	6	58,800	NA
Maui								
1995	3,621	1,649	6	6	10,684	279	125,027	136
1996	3,425	1,497	6	6	10,680	403	127,527	NA
1997	3,003	1,008	6	6	9,813	6	131,695	NA
1998	3,641	825	6	6	10,557	6	136,259	NA
1999	2,865	894	6	6	5,890	6	131,010	NA

NA = Not available.

¹ Revised.

² Excludes interfarm sales; includes out-of-State sales of slaughter cattle and feeder calves.

³ Sum of individual commodities may not add to total. Includes sheep, wool, turkeys, horses, honey, beeswax, broilers, and chickens.

⁴ Total includes aquaculture beginning 1994.

⁵ Includes all government payments, such as Agricultural Conservation Program, Cattle Indemnity Payment Program, Dairy Indemnity Payment Program, Emergency Conservation Program, Forestry Incentives Program, Emergency Feed Program, wool payments, and sugar support.

⁶ Data not shown separately to avoid disclosure of individual operations but combined and included in the State total.

AGRICULTURE'S CONTRIBUTIONS TO HAWAII'S ECONOMY, 1992

What is agriculture?

Agriculture is often misunderstood as being only farming. Agriculture is really an intricate system involving food and fiber producers, processors, manufacturers, and consumers.

What is the impact of agriculture on Hawaii's economy?

Agriculture generates \$2.9 billion or 6.1% of total business sales in Hawaii's economy and 5.6% of Hawaii's employment (42,273 jobs). Agriculture is a major contributor to Hawaii's economy, supporting tourism and government.

Are there contributions that could be attributed to agriculture but aren't because of how the economic appraisal is determined?

Yes, there are some contributions of agriculture not included as "agriculture" in this appraisal. Some examples include open space, ecotourism, watershed replenishment, cosmetics (kukui nut oil, etc.), rural lifestyle, adding diversity to Hawaii's economy, and improving our quality of life.

Distribution Margins Ground Transportation Water Transportation Air Transportation Wholesale Trade Retail Trade (including eating and drinking establishments)		OUTPUT (Business Sales) \$2.9 Billion (6.1% of HI Total)
Food and Fiber Processing Sectors Pineapple Processing Other Canned Vegetables and Fruits Sugar Processing Confectionery Products Salted and Roasted Nuts and Coffee Meat Products Milk Products Grain and Bakery Products Beverages Other Food Products and tobacco products Textiles		WAGES, SALARIES, SELF-EMPLOYMENT INCOME \$.9 Billion (4.5% of HI Total)
Farm Production and Input Sectors Sugarcane Vegetables Tree Nuts Pineapple Coffee Other Fruits Flowers, Ornamentals and Nursery Plants Dairy Farm Products Poultry and Eggs Cattle and Calves Hogs	Misc. Livestock (goats, sheep, etc.) Aquaculture Other Agricultural Products Forestry and Forest Products Commercial Fishing Agricultural, Forestry and Fishery Services Landscape and Yard Care Service Farm Machinery and Equipment Fertilizers	VALUE ADDED \$1.4 Billion (4.6% of HI Total)
		EMPLOYMENT 42,273 Jobs (5.6% of HI Total)

Source: Khem R. Sharma, PingSun Leung, and Stuart Nakamoto, "Accounting for the linkages of Agriculture in Hawaii's Business Economy with an Input-Output Model: A Final Demand-Based Approach" forthcoming in Annals of Regional Science.

RECORD HIGHS AND LOWS

Record highs and lows for selected items, State of Hawaii

Item	Unit	Record high		Record low		Year estimate started
		Quantity	Year ¹	Quantity	Year ¹	
Anthuriums						
Area in production	1,000 sq. ft.	20,908	1983	7,013	1964	1964
Total sold	1,000 doz.	2,532	1980	216	1959	1959
Price ²	\$/doz.	9.09	1997	.73	1966	1959
Avocados						
Harvested	Acres	330	1986	90	1975	1946
Production	1,000 lbs.	1,600	1982	400	1996	1946
Price ²	¢/lb.	60.0	1999	6.1	1959	1946
Bananas						
Harvested	Acres	1,420	1999	550	1977	1946
Production	1,000 lbs.	24,500	1999	4,470	1983	1946
Price ²	¢/lb.	41.0	1992	4.6	1946	1946
Cabbage, Head						
Harvested	Acres	740	1947	370	1971	1946
Production	1,000 lbs.	15,750	1989	6,800	1953	1946
Price ²	¢/lb.	22.0	1995	3.0	1959	1946
Coffee						
Harvested	Acres	6,400	1999	1,650	1985	1946
Production	1,000 lbs.	18,496	1957	990	1982	1946
Price ²	¢/lb.	390.0	1989	17.8	1946	1946
Foliage, potted (indoor)						
Sales (value)	\$1,000	14,896	1999	171	1972	1972
Ginger Root						
Harvested	Acres	360	1998	11	1974	1946
Production	1,000 lbs.	18,000	1998	352	1974	1946
Price ²	¢/lb.	92.3	1982	16.2	1949	1946
Guavas						
Harvested	Acres	1,040	1990	60	1957	1955
Production	1,000 lbs.	24,300	1990	1,737	1957	1955
Price ²	¢/lb.	15.0	1990	3.1	1956	1955
Macadamia nuts						
Harvested	Acres	19,300	1995	830	1953	1946
Production	1,000 lbs.	58,000	1997	630	1946	1946
Price ²	¢/lb.	90.0	1988	15.2	1946	1946
Papayas						
Harvested	Acres	2,650	1985	320	1952	1946
Production	1,000 lbs.	80,500	1984	5,525	1947	1946
Price ²	¢/lb.	48.9	1997	3.2	1946	1946

See footnotes at end of table.

Continued

RECORD HIGHS AND LOWS

Record highs and lows for selected items, State of Hawaii -- Continued

Item	Unit	Record high		Record low		Year estimate started
		Quantity	Year ¹	Quantity	Year ¹	
Pineapples						
Total in crop	Acres	76,700	1957	19,900	1997	1946
Production	1,000 tons	1,048	1955	324	1997	1950
Value (farm)	\$1,000	107,775	1991	29,700	1951	1950
Sugar ³						
Harvested	Acres	145,000	1933	30,300	1998	1909
Yield/acre (sugar)	Tons/acre	12.47	1986	4.81	1910	1909
Production (raw sugar)	1,000 tons	1,234	1966	354	1998	1909
Price ² (sugar)	\$/Ton	633.00	1974	52.00	1940	1909
Taro						
Harvested	Acres	1,020	1948	320	1980	1946
Production	1,000 lbs.	14,195	1948	5,440	1983	1946
Price ²	¢/lb.	53.0	1999	3.1	1949	1946
Tomatoes						
Harvested	Acres	600	1950	150	1972	1946
Production	1,000 lbs.	16,800	1999	3,300	1972	1946
Price ²	¢/lb.	65.0	1990	9.1	1947	1946
Watermelons						
Harvested	Acres	870	1950	125	1979	1946
Production	1,000 lbs.	20,400	1995	1,130	1979	1946
Price ²	¢/lb.	25.7	1981	6.4	1955	1946
Cattle and calves						
Jan. 1 inventory	Head	249,000	1971	130,000	1946	1946
Production (lv. wgt.)	1,000 lbs.	64,750	1989	25,470	1953	1946
Price ²	\$/cwt.	57.50	1993	12.30	1946	1946
Hogs and pigs						
Dec. 1 inventory	Head	72,000	1965	28,000	1999	1960
Production (lv. wgt.)	1,000 lbs.	13,159	1978	6,105	1997	1960
Price ²	\$/cwt.	83.10	1998	29.50	1964	1960
Milk						
Marketings	Million lbs.	157.1	1988	65.2	1946	1946
Production per cow	lbs./cow	14,494	1998	8,750	1960	1960
Price ²	\$/cwt.	26.46	1999	6.75	1946	1946
Eggs						
Layers Dec. 1	Head	1,037,000	1974	302,000	1950	1950
Production	Million eggs	229.3	1979	120.0	1958	1958
Price ²	¢/doz.	90.6	1997	39.2	1968	1958

¹ In case of a tie, the most recent year was used.

² Prices are annual or crop-year average.

³ Primary data source, Hawaiian Sugar Planters' Association.

FARM FINANCIAL INDICATORS

Farm Business Balance Sheet, State of Hawaii, December 31, 1996-98

	1996	1997	1998
Number of farms	¹ 5,400	¹ 5,500	5,500
	<i>Thousand dollars</i>		
Farm assets	¹ 3,627,681	¹ 3,552,630	3,948,736
Real estate	¹ 3,214,614	¹ 3,209,268	3,203,921
Livestock and poultry ²	74,538	¹ 92,328	88,540
Machinery and motor vehicles ³	¹ 242,619	¹ 151,165	150,502
Crops ⁴	0	0	218,770
Purchased inputs	9,367	10,979	11,292
Financial	¹ 86,543	¹ 88,890	275,711
Farm dept ⁵	233,660	250,756	264,786
Real estate	136,728	145,236	156,906
Farm Credit System	50,824	58,613	66,795
Farm Service Agency ⁶	26,507	24,705	23,881
Commercial banks	36,253	39,312	42,316
Life insurance companies	12,221	11,406	12,826
Individuals and others	10,922	11,200	11,089
CCC storage & drying loans	0	0	0
Nonreal estate	96,932	105,520	107,880
Farm Credit System	8,589	9,736	9,122
Farm Service Agency ⁶	14,799	16,151	16,335
Commercial banks	33,243	36,164	37,143
Individuals and others	40,301	43,470	45,281
Equity	¹ 3,394,021	¹ 3,301,874	3,683,950
Ratio:			
Debt/equity	¹ 6.9	¹ 7.6	7.2
Debt/assets	¹ 6.4	¹ 7.1	6.7

¹ Revised.

² Excludes horses, mules, and broilers.

³ Includes only farm share value for trucks and autos.

⁴ All non-CCC crops held on farms plus the value above loan rate for crops held under CCC.

⁵ Excludes debt for nonfarm purposes.

⁶ Farmers Home Administration prior to 1994.

Source: Economic Research Service, USDA.